

MODEL PROGRAM FOR SPECIAL INSPECTION

BASED ON IBC® CHAPTER 17



INTERNATIONAL
ACCREDITATION SERVICE, INC.
Leading Accreditors Since 1975



INTERNATIONAL
CODE COUNCIL®

Model Program for Special Inspection:
Based on IBC Chapter 17

ISBN 1-58001-292-2

COPYRIGHT © 2005, International Code Council



ALL RIGHTS RESERVED. This publication is a copyrighted work owned by the International Code Council. Without advance written permission from the copyright owner, no part of this book may be reproduced, distributed or transmitted in any form or by any means, including, without limitation, electronic, optical or mechanical means (by way of example and not limitation, photocopying, or recording by or in an information storage and retrieval system). For information on permission to copy material exceeding fair use, please contact: ICC Publications, 4051 W. Flossmoor Rd, Country Club Hills, IL 60478-5795, Phone 1-888-ICC-SAFE (422-7233).

The information contained in this document is believed to be accurate; however, it is being provided for informational purposes only and is intended for use only as a guide. Publication of this document by the ICC should not be construed as the ICC engaging in or rendering engineering, legal or other professional services. Use of the information contained in this publication should not be considered by the user as a substitute for the advice of a registered professional engineer, attorney or other professional. If such advice is required, you should seek the services of a registered professional engineer, licensed attorney or other professional.

Trademarks: "International Code Council" and the "ICC" logo are trademarks of International Code Council, Inc.

Publication Date: November 2005

First Printing: November 2005

Second Printing: March 2006

Printed in the United States of America

FOREWORD

This document provides the building official with guidance on the administration and implementation of the special inspection requirements of Section 1701 of the *International Building Code*® (IBC®). The guidance is based on recommended practices and the consensus of building officials, design professionals, and inspection and testing agencies. Duties and responsibilities of the building official, special inspector, project owner, registered design professional in responsible charge, and contractor are defined in this guide.

In the past, special inspection tasks were often delegated to the project owner, registered design professional in responsible charge, and sometimes building contractors. In the 21st century, the responsibilities of the building official in providing oversight of special inspection activities is driven by several factors, including legal liability, insistence on competent performance and completion of work as specified and approved, and by more involvement of local government. Accordingly, the use of certified individuals or accredited organizations is becoming increasingly prevalent and necessary.

Under the IBC, special inspection is not a discretionary activity. The conditions under which special inspection must be utilized is clearly stated in IBC Section 1704; however, there is a provision for the building official to waive special inspection for work of a minor nature.

A special inspector is an individual with specialized skills who observes critical building or structural features identified by the design professional responsible for compliance to plans and specifications approved by the building official. Ensuring the competence of special inspectors is the responsibility of the building official. Although the IBC lacks specific qualification requirements, this fact does not lessen the importance of diligence in the critical process of approving special inspectors.

Recognizing the need for support to its member building departments across the U.S., the International Code Council® (ICC®) developed certification and accreditation programs to identify competent individuals and organizations that perform special inspection. ICC Professional Development Services (PDS) certification programs require individuals seeking certification as special inspectors to have demonstrated a level of competence in a manner that will protect the safety and welfare of the public. Individuals may achieve certification through ICC by participating in a number of seminars and training classes, and passing written examinations. Organizations that employ special inspectors and provide inspection services to the building industry can gain accreditation by International Accreditation Service™ (IAS™), a subsidiary of ICC.

The IAS accreditation program requires special inspection organizations to operate under a documented quality system, to use certified inspectors and to meet comprehensive accreditation requirements, including on-site assessment by subject-matter-experts who are either currently practicing or supervising special inspectors or who are building officials. Successful on-site assessment leads to accreditation for a specific scope of special inspection where the organization has been found competent.

Further information regarding the certification of individuals or accreditation of organizations that perform special inspection can be found on the websites below:

IAS <http://www.iasonline.org/>
ICC.PDS www.iccsafe.org/certification

ACKNOWLEDGEMENTS

The Model Program for Special Inspection has its roots in 1986 when it was first offered to building officials, jurisdictions, and inspection and testing agencies. It focused on the field inspection aspects of special inspection and is now used as a standard reference for the special inspector exams.

The original program was the culmination of the efforts of building officials, inspectors and inspection/testing agencies associated with California Council of Testing and Inspection Agencies (CCTIA). Since that time, many others have voluntarily given of their time and talents to keep this document current and pertinent to the special inspection profession. This document has been reviewed over the years by the special inspector exam committees before and after the consolidation of ICC. The following are participants of these committees:

Charles Ballou	Minnesota	R.D. Messer	Louisiana
Stan Beeler	Ohio	Jim Messersmith	Virginia
Jeffery Bowers	Washington	Charles Mlodzik	Washington
James Byrnes	Kansas	William Murchinson	North Carolina
Clifford Craig	California	Robert Nagin	Florida
Michelle Craig	California	Phillip Nishikawa	California
Fred Deis	Oregon	Sam Palmer	Nevada
David Drenth	Minnesota	Gary Pedersen	Washington
Roger Evans	Utah	Anthony Re	Oregon
Carl Eriksson	Utah	Don Riley	Alabama
Fayez Fanik	New Jersey	Gerald Smith	Alabama
Harry Gleich	South Carolina	Bill Stevens	South Carolina
Charles Hemsley	California	Thomas Stevens	California
Jeff Hilfiker	Kansas	Emile Troup	Maine
Merlyn Isaak	California	Zan Turner	California
Don Johnson	Florida	W.F. Urbick	Washington
David Janifer	Virginia	George Voigt	Philidelphia
Joe Kane	New York	Michael Wheeler	California
Roy Keck	Georgia	Kip Williamson	California
Ron Lynn	Nevada	David Wismer	Pennsylvania
Mehrdad Maher	California	Daniel Zechmeister	Michigan
Calvin McCall	North Carolina		

Thanks to all who have participated in bringing together a model program for special inspection that can be adapted by others without changing the intent of how the special inspector performs his work.

The accreditation information that was added in this edition was provided by Pat McCullen, Vice President of IAS.

CONTENTS

I. Special Inspection – An Overview

Provides an overview of project quality assurance through special inspection.

II. General Program Guidelines

Describes overall purposes for special inspection and outlines the respective duties and responsibilities of special inspectors, project owners, designers, contractors and building officials.

III. Recommended Special Inspector Qualifications

Lists suggested competency and experience standards, and references performance standards for special inspectors as an aid to building officials in determining special inspector competence needed to perform specific tasks in accordance with IBC Section 1704.

IV. Recommended Testing and Inspection Agencies Accreditation

Gives a brief description of the accreditation program offered by International Accreditation Service (IAS) for agencies performing this work.

Appendix A – Examples of Special Inspection Forms, Schedules and Agreements

Examples that can be photocopied and adapted for use by municipal agencies, special inspectors, and special inspection agencies.

Municipal Agency Forms

- Special Inspection and Testing Agreement
- Special Inspection and Testing Schedule
- Special Inspection Record

Special Inspection Forms

- Daily Report Form
- Weekly Report Form
- Discrepancy Notice
- Final Report Form

Appendix B – Job Task Lists for Special Inspectors

These lists were compiled from job task analyses conducted through extensive surveys of practitioners in the applicable disciplines.

Reinforced Concrete
Prestressed Concrete
Structural Masonry
Structural Steel and Bolting
Structural Steel and Welding
Spray-applied Fireproofing

Appendix C – Examples of Special Inspector Qualification Standards

Examples of certification and experience standards for determining the competency of special inspectors.

I. SPECIAL INSPECTION – AN OVERVIEW

There are several areas of construction regulated by the IBC where special inspection is mandatory. These inspections are to verify that work that is considered critical to life safety and property protection is being or has been constructed according to the approved plans and specifications. Although Section 1704.1 of the IBC requires the owner or the registered design professional acting as the owner's agent to provide for specially qualified inspectors, the approval of these inspectors is solely the responsibility of the building official. These inspections are in addition to the inspections specified in IBC Section 109 or specific structural observation as may be required by code. A special inspector is a person who has been approved by the building official to perform certain types of inspection as detailed in IBC Section 1704. Special inspection requirements in the IBC are comprehensive and consist of 14 major categories as follows:

1. **Inspection of fabricators** – where fabrication of structural load-bearing members and assemblies are being performed on the premises of the fabricator. Note the exception for approved fabricators. See Section 1704.2.
2. **Steel construction** – See Table 1704.3 for detailed information regarding inspections, IBC references and other referenced standards.

Sub-areas under steel construction are:

- Material verification of high-strength bolts, nuts and washers
- Inspection of high-strength bolting
- Material verification of structural steel
- Material verification of weld filler materials
- Inspection of welding for both structural steel and reinforcing steel
- Inspection of steel frame joint details for compliance with approved construction documents

Note Exceptions 1 and 2 listed in Section 1704.3 discussing steel fabrication without heating operations of any kind and continuous and periodic inspection of certain welding operations.

3. **Concrete construction** – See Table 1704.4 for detailed information regarding inspections.

Sub-areas under concrete construction (see Section 1704.4) are:

- Reinforcing steel, including prestressing tendons and placement
- Bolts to be installed in concrete prior to and during placement of concrete
- Verifying use of required design mix
- Sampling fresh concrete and performing slump, air content and fresh concrete temperature at time of making specimens for strength tests
- Proper application techniques for concrete and shotcrete placement

- Maintaining specified curing temperature and techniques
- Prestressed concrete, including application of prestressing forces and grouting of bonded prestressing tendons
- Erection of precast concrete members
- Verifying in-situ concrete strength prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs

Note Exceptions 1, 2, 3, 4 and 5 in Section 1704 discussing footings for buildings three stories or less, nonstructural slabs, foundations and certain exterior concrete features when placed on grade. Be aware of criteria allowing use of these exceptions.

4. Masonry construction – Tables 1704.5.1 and 1704.5.3 show detailed information regarding Level 1 and Level 2 special inspections for masonry construction and whether continuous or period inspection is required.

Sub-areas under masonry construction (see Section 1704. 5) are:

- Verification of site-prepared mortar, construction of mortar joints and locations of reinforcement and connectors
- Verification of size and location of structural elements, type, size and location of anchors including details of anchorage of masonry to structural members, frames or other construction
- Verification of specified size, grade and type of reinforcement
- Verifying welding of reinforcing bars
- Verifying protection of masonry during cold or hot weather
- Verifying prior to grouting to ensure grout space is clean and proportions of site-prepared grout
- Verifying grout placement is in compliance with code and construction document provisions
- Preparation of any grout specimens, mortar specimens and/or prisms
- Verification of compliance with required inspection provisions of the construction documents and the approved submittals

Note Exceptions 1 and 2 that discuss glass block uses and masonry foundation walls.

5. Wood construction – inspection of the fabrication of wood structural elements and assemblies both prefabricated and field assembled or site built. See Section 1704.6.

Sub-areas for wood construction when high-load diaphragms are constructed (see Section 1704.6.1):

- Verification of structural wood panel sheathing for grade and thickness
- Verification of nominal size of framing members

- Verification of diameter and length of fasteners and spacing of fasteners in the line of structural members and at panel edges
6. **Soils** – Inspection site for existing conditions, verification of site preparation prior to placement of prepared fill, verification of fill material and maximum lift thicknesses and verification that in-place densities meet the requirements of the approved soils report. See Section 1704.7.
 7. **Pile foundations** – Inspection of installation and testing of pile foundations and record installation, load tests and cutoff and tip elevation of each pile. See Section 1704.8.
 8. **Pier foundations** – Inspection of pier foundations in accordance with Section 1616.3 for buildings located in Seismic Design Categories C, D, E or F. See Section 1704.9.
 9. **Wall panels and veneers** – Inspection of exterior and interior architectural wall panels and the anchoring of veneers for buildings assigned to Seismic Design Categories E and F. Inspections of veneers shall meet requirements of Section 1704.5. See Section 1704.10.
 10. **Sprayed fire-resistant materials** – Inspection of fire-resistive material applied to structural elements and decks in accordance with Sections 1704.11.1 through 1704.11.5. These tasks would apply to cementitious, fibrous and intumescent products.

Sub-areas for inspection of sprayed fire-resistant materials are:

- Verification of structural member surface conditions
 - Verification of the application of materials per manufacturer's instructions
 - Verification of the thicknesses and density of applied materials
 - Verification of the bond strength of applied materials
11. **Exterior insulation and finish systems (EIFS)** – See Section 1704.12 for exceptions to inspection when EIFS is applied over water-resistive barriers with a means for draining excess water and EIFS installed on masonry or concrete.
 12. **Special cases** – Inspections, in the opinion of the building official, that are needed because of the use of alternate materials, unusual design or use of materials not having building code approval or needing to meet special manufacturer requirements. See Section 1704.13 for examples where the building official has discretion to require special inspection.
 13. **Smoke control** – Inspections involving testing of ductwork during erection, prior to concealment and prior to occupancy for pressure difference, flow measurements and detection and control verification. See Section 1704.14.
 14. **Special inspection for seismic resistance and wind requirements** – Section 1707 describes special inspection requirements for seismic resistance required in the following construction systems: structural steel framing, structural wood framing, cold-formed steel framing, storage racks and access floors, architectural components, mechanical and electrical components and seismic isolation systems. See Sections 1706, 1707, 1708 and 1709 for specific information regarding quality assurance plans, special inspections and testing requirements.

II. GENERAL PROGRAM GUIDELINES

A. Purpose of Special Inspection

Special inspection is the monitoring of the materials and workmanship that are critical to the integrity of the building structure. It is the review of the work of the contractors and their employees to assure that the approved plans and specifications are being followed and that relevant codes and ordinances are being observed. The special inspection process is in addition to those conducted by the municipal building inspector and by the registered design professional in responsible charge as part of periodic structural observation. Special inspectors furnish continuous or periodic inspection as prescribed in IBC Table 1704.3 for that construction which requires their presence (see IBC Sections 109.3.9 and 1704).

Good communication between the special inspector and the designers, contractor and building department is essential to project quality assurance.

B. Duties and Responsibilities of the Special Inspector

Though not required by code, special inspectors and/or inspection agencies can document acceptance of their responsibilities and scope of work for a project by signing an agreement that includes a detailed schedule of services, commonly known as the Special Inspection and Testing Agreement and the Special Inspection and Testing Schedule. An example of these forms is included in Appendix A.

Duties of special inspectors and/or inspection agencies include the following:

1. **General requirements.** Special inspectors shall review approved plans and specifications for special inspection requirements. Special inspectors will comply with the special inspection requirements of the enforcing jurisdiction.
2. **Signify presence at jobsite.** Special inspectors shall notify contractor personnel of their presence and responsibilities at the jobsite. If required by the building official, they shall sign in on the appropriate form posted with the building permit. An example of a special inspection jobsite record is included in Appendix A.
3. **Observe assigned work.** Special inspectors shall inspect all work for which they are responsible for conformance with the building department approved (stamped) plans and specifications and applicable provisions of IBC Section 1704.
4. **Report nonconforming items.** Special inspectors shall bring all nonconforming items to the immediate attention of the contractor. If any such item is not resolved in a timely manner or is about to be incorporated into the work, the registered design professional in responsible charge and the building official should be notified immediately and the item noted in the special inspector's written report (see IBC Section 1704.1). An example of a discrepancy notice is included in Appendix A. The special inspector shall write a separate report to be posted at the jobsite regarding noted discrepancies, which should contain, as a minimum, the following information about each nonconforming item:
 - Description and exact location
 - Reference to applicable detail of approved plans/specifications
 - Name and title of each individual notified and method of notification
 - Resolution or corrective action taken

5. Provide timely reports. The special inspector shall complete written inspection reports for each inspection visit and provide the reports on a timely basis as determined by the building official. The special inspector or inspection agency shall furnish these reports directly to the building official, registered design professional in responsible charge and others as designated (see IBC Section 1704.1.2). These reports should be organized on a daily format and may be submitted weekly at the option of the building official. Examples of daily and weekly report forms are included in Appendix A. In these reports, special inspectors should:

- Describe inspections and tests made with applicable locations
- Indicate how nonconforming items were resolved
- List unresolved items, parties notified, and time and method of notification
- Itemize changes authorized by registered design professional in responsible charge if not included in nonconforming items

6. Submit final report. Special inspectors or inspection agencies shall submit a final signed report to the building department stating that all items requiring special inspection and testing were fulfilled and reported and, to the best of their knowledge in conformance with the approved plans, specifications and the applicable provisions of the IBC (see IBC Section 1704.1.2). Items not in conformance, unresolved items or any discrepancies in inspection coverage (i.e., missed inspections, periodic inspection when continuous was required, etc.) should be specifically itemized in this report. An example of a final report form is included in Appendix A.

C. Duties and Responsibilities of the Project Owner

The project owner, the registered design professional in responsible charge, or an agent of the owner is responsible for funding special inspection services. The special inspector/agency shall not be in the employ of the contractor, subcontractor or material supplier (see IBC Section 106.3.5). In the case of an owner/contractor, the special inspector/agency shall be employed as specified by the building official.

D. Duties and Responsibilities of the Design Professional in Responsible Charge

The design professional in responsible charge should be a consenting party by written acknowledgment of special inspection and testing agreements. An example of such an agreement is included in Appendix A. The design professional in responsible charge has many duties and responsibilities related to special inspection, including the following:

Prepare special inspection program. The design professional in responsible charge shall list the items for which special inspection is required, and shall indicate which, if any, items for which the IBC or the building official approves periodic inspection and the frequency of such inspection (see IBC Section 106.3.4).

The design professional in responsible charge should coordinate with the project owner in the selection of special inspectors (see IBC Section 1704.1) and is required to list special inspectors and their duties on the special inspection program (see IBC Section 106.3.4.1). Subject to the approval of the building official, special inspectors holding current certification by ICC in the discipline in which they will be inspecting can be considered qualified. Likewise, special inspection agencies holding current accreditation with IAS with the appropriate scope of accreditation for the disciplines to be inspected can be considered qualified. The choice of special inspectors or special inspection agencies should include the following considerations:

- Project size and complexity – experience with similar projects
- Inspection staffing – sufficient qualified inspectors
- Site location – proximity of inspection and testing facilities
- Offsite inspection – capabilities for inspection at remote locations

Completion of a special inspection and testing agreement and schedule, as shown in the Appendix A examples, is a simple method of fulfilling the requirement for preparation of a special inspection program that can be easily reviewed by the building official.

Respond to field discrepancies. The registered design professional in responsible charge shall respond to special inspector reports of uncorrected noncomplying items and shall approve remedial measures.

Review shop drawings and submit revisions to approved plans. The design professional in responsible charge shall acknowledge and approve shop drawings that may detail structural information. The design professional shall submit to the building official and to the special inspection agency written approval of any verbally approved deviations from the approved plans and shall submit revised plans for building official approval as required (see IBC Section 106.3.4.2).

E. Duties and Responsibilities of the Contractor

The contractor's duties include the following:

Notify the special inspector. The holder of the building permit or their duly authorized agent is responsible for notifying the special inspector or agency regarding individual inspections required by the building department (see IBC Section 109.5). Adequate notice shall be provided so that the special inspector has time to become familiar with the project.

Provide access to approved plans. The contractor is responsible for providing the special inspector with access to approved plans (see IBC Section 106.3.1).

Retain special inspection records. When required by the building official, the contractor is responsible for retaining at the jobsite all special inspection records submitted by the special inspector and providing these records for review by the building department's inspector upon request.

F. Duties and Responsibilities of the Building Official

Of all the team members involved in the construction process, the building official is the only one with the legal authority to enforce the special inspection provisions of the code (see IBC Section 104.4). The employment of a special inspector or agency shall not relieve the building department of responsibility for special inspections required by the code. Building department inspections of items also requiring special inspection should not be signed off without the concurrence of the special inspector.

The specific duties and responsibilities of the building official relating to special inspection include the following:

Review submittal documents for compliance with special inspection requirements. The building official is charged with the legal authority to review the plans, specifications, special inspection program and other submittal documents for compliance with code requirements (see IBC Sections 104.2, 106.3 and 106.3 through 106.5).

Approve special inspection program. The building official is responsible for approving the special inspection program submitted by the design professional in responsible charge (see IBC Section 1704.1) and may require a preconstruction conference to review the program with all applicable members of the construction team.

Approve special inspectors/inspection agencies. The building official is responsible for determining competence of special inspectors for the types of work they will be inspecting (see IBC Section 1704). Suggested qualifications for special inspectors are contained in Part III of this guide.

Monitor special inspection activities. The building official should monitor the special inspection activities at the jobsite to assure that qualified special inspectors are performing their duties when work requiring special inspection is in progress.

Review inspection reports. The building official receives and reviews special inspection progress reports and final reports for conformance with the approved plans, specifications and workmanship provisions of the code (see IBC Section 1704.1.2).

Perform final inspection. The building official should not perform the final inspection and approval for a project (see IBC Section 109.3.10) until the final special inspection report has been reviewed and approved.

III. RECOMMENDED SPECIAL INSPECTOR QUALIFICATIONS

A. Code Knowledge and Plan Reading Competency Standards

The building official has the responsibility to ascertain that special inspectors and/or agencies are qualified for the type(s) of inspection required. In some geographic areas, cooperative jurisdictional programs for the recognition of competent inspectors/agencies are available to assist in satisfying this requirement. Qualification standards may include:

1. Individuals maintaining current certification by ICC as a special inspector for the discipline(s) for which he or she is requesting approval
2. Agencies maintaining current accreditation as a special inspection agency by IAS with a scope of accreditation covering the discipline(s) for which the agency is requesting approval
3. Written or oral examination to verify the applicant's knowledge of jurisdictional procedures and code requirements

B. Experience Standards

The specialized knowledge and skills needed to perform special inspection should be obtained by experience in some aspect of the discipline being inspected. Industry standards typically require 1–5 year(s) of verifiable practical experience, depending upon the discipline and the level of inspection, a portion of which may be satisfied by applicable technical education. There are also provisions for trainees who may work under the direct supervision of qualified special inspectors. An example of detailed guidelines for special inspector experience standards is contained in Appendix C.

The building official may require that special inspector applicants provide evidence of experience through the following and/or other means:

1. Written references verifying related work experience; and/or
2. Personal interview to evaluate the applicant's work experience and suitability to be a special inspector.
3. Evidence of compliance with a recognized industry experience guideline (see example in Appendix C).

C. Performance Standards

The building official may use the model code organization job task lists for special inspector certification exams as guidelines for evaluating the performance of special inspectors in each of the applicable disciplines. These lists are included in Appendix B and contain comprehensive tasks, which may be performed by special inspectors on large and complex projects. Actual tasks required on specific projects will typically be fewer.

IV. RECOMMENDED TESTING AND INSPECTION AGENCIES ACCREDITATION

A. Special Inspection Agencies Program

In response to a request from several ICC governmental members, International Accreditation Service (IAS) has developed an accreditation program for agencies providing the special inspections that are required for specific construction projects under Chapter 17 of the *International Building Code* (IBC). The IAS Special Inspection Agency Accreditation Program is based primarily on the requirements of the IBC and the applicable portions of ISO/IEC 17020 (General Requirements for the Operation of Various Bodies Performing Inspection). The program requires special inspection agencies to operate under a quality management system that is documented in a manual, and also requires the agency to be assessed in the field to determine if it is competent to perform specific inspections or types of inspections. IAS accreditation is based on the assessment of a special inspection agency's inspection procedures, the competence of its inspection staff and its reporting procedures.

B. Testing Laboratories Program

Industry depends on reliable assessment of testing and calibration laboratories, inspection agencies and fabricator inspection programs. Accurate test, calibration and inspection results are vital for the protection of public health and safety and to facilitate trade. IAS operates nationally and internationally-recognized accreditation programs, some of which are specifically tailored to the needs of the building official. The IAS laboratory accreditation program is modeled on international standard ISO/IEC Standard 17025 and is recognized globally by the International Laboratory Accreditation Cooperation (ILAC), the Asia Pacific Laboratory Accreditation Cooperation (APLAC) and nationally by the National Cooperation for Laboratory Accreditation (NACLA). Laboratory accreditation, traceability of measurements and uniform testing requirements minimize technical barriers to trade and reduce the financial burden on manufacturers. Evaluation of a product, material or piece of equipment should be based on reports from accredited testing laboratories that are supported by accredited calibration laboratories to ensure traceable and repeatable measurements.

C. Public, Affected Parties and Regulator Access

The IAS accreditation programs are monitored by an Accreditation Committee that is composed of code regulators who approve all accreditation criteria. Through its Accreditation Committee, IAS follows a public hearing process that allows for input from regulators, laboratories, inspection agencies and other interested parties. Members of the Accreditation Committee are appointed by the IAS Board of Directors. The Accreditation Committee provides a transparent process that provides access to all interested parties. On technical matters IAS maintains two formally appointed Technical Advisory Councils (TACs) consisting of experts drawn from accredited calibration and testing laboratories and special inspection agencies. Each TAC provides technical guidance to IAS on matters relating to calibration and testing or special inspection as the need arises.

APPENDIX A - SECTION 1

Examples of Special Inspection Forms, Schedules and Agreements

Municipal Agency Forms

- Special Inspection and Testing Agreement
- Special Inspection and Testing Schedule
- Special Inspection Record

(THESE FORMS MAY BE PHOTOCOPIED)

SPECIAL INSPECTION AND TESTING AGREEMENT

To permit applicants of projects requiring special inspection and/or testing per Section 1704 of the *International Building Code* (IBC):

Project Address: _____ Permit No.: _____

BEFORE A PERMIT CAN BE ISSUED: The owner, or the registered design professional in responsible charge, acting as the owner's agent, shall complete two (2) copies of this agreement and the attached Special Inspection and Testing Schedule, including the required acknowledgments. A preconstruction conference with the parties involved may be required to review the special inspection requirements and procedures.

APPROVAL OF SPECIAL INSPECTORS: Special inspectors may have no financial interest in projects for which they provide special inspection. Special inspectors shall be approved by the building department prior to performing any duties. Special inspectors shall submit their qualifications and are subject to personal interviews for prequalification. Special inspectors shall display approved identification, as stipulated by the building official, when performing the function of special inspector.

Special inspection and testing shall meet the minimum requirements of *International Building Code* Section 1704. The following conditions are also applicable:

A. Duties and Responsibilities of the Special Inspector

1. **Signify presence at jobsite.** Special inspectors should notify contractor personnel of their presence and responsibilities at the jobsite. If required by the building official, they shall sign in on the appropriate form posted with the building permit.
2. **Observe assigned work.** The special inspector shall observe assigned work for conformance with the building department approved (stamped) design drawings and specifications and applicable workmanship provisions of the *International Building Code*. Architect/engineer-reviewed shop drawings may be used only as an aid to inspection.

For continuous special inspection, the special inspector shall be on site at all times observing the work requiring special inspection. Periodic inspections, if any, must have prior approval based on a separate written plan reviewed and approved by the building department and the registered design professional in responsible charge. Periodic inspection is intended to mean that the inspector at periodic times inspects all work performed but is not required to "witness" the work being performed.

3. **Report nonconforming items.** The special inspector shall bring nonconforming items to the immediate attention of the contractor and note all such items in the daily report. If any item is not resolved in a timely manner or is about to be incorporated in the work, the special inspector shall immediately notify the building department by telephone or in person, notify the registered design professional in responsible charge and post a discrepancy notice.
4. **Provide timely reports.** The special inspector should complete written inspection reports for each inspection visit and provide the reports on a timely basis determined by the building official. The special inspector or inspection agency shall furnish these reports directly to the building official, registered design professional in responsible charge and others as designated

(see IBC Section 1704.1.2). These reports should be organized on a daily format and may be submitted weekly at the option of the building official. Examples of daily and weekly report forms are included in Appendix A. These reports should include:

- a. Description of daily inspections and tests made with applicable locations;
- b. Listing of all nonconforming items;
- c. Report on how nonconforming items were resolved or unresolved as applicable; and
- d. Itemized changes authorized by the architect, engineer and building official if not included in nonconforming items.

5. **Submit final report.** The special inspector or inspection agency shall submit a final signed report to the building official stating that all items requiring special inspection and testing were fulfilled and reported and, to the best of his/her knowledge, in conformance with the approved design drawings, specifications, approved change orders and the applicable workmanship provisions of the *International Building Code*. Items not in conformance, unresolved items or any discrepancies in inspection coverage (i.e., missed inspections, periodic inspections when continuous were required, etc.) shall be specifically itemized in this report.

- B. Owner Responsibilities.** The project owner, the registered design professional in responsible charge or an agent of the owner is responsible for employing special inspection services. The special inspector/agency shall not be in the employ of the contractor, subcontractor or material supplier (see IBC Section 1704.1). In the case of an owner/contractor, the special inspector/agency shall be employed as specified by the building official.

C. Registered Design Professional in Responsible Charge Responsibilities

1. **Prepare special inspection program.** The registered design professional in responsible charge shall list the items for which special inspection is required and shall indicate which, if any, items for which the IBC or the building official approves periodic inspection and the frequency of such inspection.
2. **Respond to field discrepancies.** The registered design professional in responsible charge shall respond to uncorrected field deficiencies in design, material or workmanship observed by the special inspector.
3. **Review shop drawings and submit design changes.** The registered design professional in responsible charge shall acknowledge and approve shop drawings that may detail structural information, shall submit to the building official and to the special inspection agency written approval of any verbally approved deviations from the approved plans and shall submit revised plans for building official approval as required.

D. Contractor Responsibilities

1. **Notify the special inspector.** The contractor is responsible for notifying the special inspector or agency regarding individual inspections for items listed on the attached schedule and as noted on the building department approved plans. Adequate notice shall be provided so the special inspector has time to become familiar with the project.
2. **Provide access to approved plans.** The contractor is responsible for providing the special inspector access to approved plans.

3. **Retain special inspection records.** The contractor is also responsible for retaining at the jobsite all special inspection records completed by the special inspector upon request.

E. Building Department Responsibilities

1. **Approve special inspection program.** The building department shall approve all special inspectors and special inspection requirements.
2. **Enforce special inspection.** Work requiring special inspection and the performance of special inspectors shall be monitored by the building inspector. His/her approval must be obtained prior to placement of concrete, covering of structural steel or other similar activities in addition to that of the special inspector.
3. **Review inspection reports.** The building official should review special inspection progress and final reports.
4. **Perform final inspection.** The building official should perform the final inspection and approval for a project (see IBC Section 109.3.10) after the final special inspection report has been reviewed and approved.

ACKNOWLEDGMENTS

I have read and agree to comply with the terms and conditions of this agreement.

Owner:

_____ By: _____ Date: _____

Project Engineer/Architect:

_____ By: _____ Date: _____

Soils Engineer:

_____ By: _____ Date: _____

Contractor:

_____ By: _____ Date: _____

Special Inspector or Inspection Agency:

_____ By: _____ Date: _____

ACCEPTED FOR THE BUILDING DEPARTMENT

By: _____ Date: _____

SPECIAL INSPECTION AND TESTING SCHEDULE

1. Concrete

- ☐ Continuous placement inspection
☐ Exceptions _____
☐ _____ Cylinders per _____ CY
 Test: _____ @7 _____ @28 _____ Hold

2. Bolts installed in concrete

- ☐ All bolts
☐ Location: _____

3. Special moment-resisting concrete frame

- ☐ As Indicated
☐ Location: _____

4. Reinforcing steel and prestressing tendons

- ☐ Placement inspection
☐ Stressing and grouting of tendons

5. Structural Welding

Periodic Visual Inspection:

- ☐ Single pass fillet welds < 5/16"
☐ Steel deck
☐ Welded studs
☐ Cold formed studs and joists
☐ Stair and railing systems
☐ Reinforcing steel

Continuous Visual Inspection

- ☐ All other welding
☐ Reinforcing steel
☐ Other _____

Special moment-resisting frames:

- ☐ UT all CJP groove welds
☐ UT all CJP groove welds > 5/16"
☐ UT all PP groove welds in column splices
☐ UT all PP groove welds in column splices > 3/4"
☐ UT column flanges at beam flange welds
☐ NDT rate reduction per UBC 1703.1 applies
☐ Other _____

6. High strength bolting

- Snug Tight: ☐ All
 ☐ As Indicated
 Full Pretension ☐ All
 ☐ As Indicated

7. Structural Masonry $f_m =$ _____, Stresses _____

- Verification of f_m : ☐ Prism tests
 ☐ Prism test record
 ☐ Unit strength
☐ Continuous inspection
☐ Periodic inspection: _____

7. Structural masonry (continued)

- | | | |
|--------|--------------------------|--------------------------|
| Test: | Before | During |
| Prisms | <input type="checkbox"/> | <input type="checkbox"/> |
| Units | <input type="checkbox"/> | <input type="checkbox"/> |
| Grout | <input type="checkbox"/> | <input type="checkbox"/> |
| Mortar | <input type="checkbox"/> | <input type="checkbox"/> |

8. Reinforced gypsum concrete

- ☐ Continuous inspection of mixing and placement
☐ Periodic inspection _____
☐ Strength testing _____

9. Insulating concrete fill

- ☐ Periodic inspection _____
☐ Strength testing _____

10. Spray-applied fire resistive materials

- ☐ Periodic inspection _____
☐ Testing per UBC Std. 7-6

11. Piling, drilled pier and caisson

- | | | |
|--------------|--------------------------|--------------------------|
| | Continuous | Periodic |
| Pile Driving | <input type="checkbox"/> | <input type="checkbox"/> |
| Drilling | <input type="checkbox"/> | <input type="checkbox"/> |
| Testing | <input type="checkbox"/> | <input type="checkbox"/> |

12. Shotcrete

- ☐ Continuous placement inspection
☐ Preconstruction panel
☐ In-place cores
 Strength testing:
☐ Test panel
☐ In-place cores

13. Special grading, excavation, and filling

- ☐ Periodic Inspection
☐ Subgrade tests _____
☐ Compaction tests _____
☐ Verify bearing strata

14. Smoke control systems

- ☐ Periodic inspection during ductwork erection
☐ During system testing

15. Special cases

- ☐ Shear wall/diaphragm nailing
 Anchorage to existing concrete/masonry
 ☐ Installation inspection
 ☐ Proof load testing
☐ Shoring
☐ Underpinning

Notes:

SPECIAL INSPECTION RECORD

City of _____

Inspection Agency: _____
Project Address: _____

Building Permit No.: _____

NOTE: Each special inspector shall complete for each day's inspection. Post this card adjacent to building permit inspection report card. Weekly reports to be submitted by each special inspection/inspection agency to the building department.

When attached to the job inspection record card, this card becomes a part of the inspection record.

[illegible]

APPENDIX A – SECTION 2

Examples of Special Inspection Forms, Schedules and Agreements

Special Inspection Forms

- Special Inspection Daily Report Form
- Special Inspection Weekly Report Form
- Special Inspection Discrepancy Notice
- Special Inspection Final Report Form

(THESE FORMS MAY BE PHOTOCOPIED)

SPECIAL INSPECTION DAILY REPORT

City/County of _____ Permit No.: _____ Date : _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

☐ Continuous ☐ Periodic; frequency: _____

Inspections made, including locations: _____

Tests performed: _____

Items requiring 1) Correction, 2) Correction of previously listed items and 3) Previously listed uncorrected items: _____

Changes to approved plans authorized by registered design professional in responsible charge: _____

Comments: _____

To the best of my knowledge, work inspected was in accordance with the building department approved plans, specifications and applicable workmanship provisions of the IBC except as noted above.

Signed: _____ Inspection Agency: _____

Print full name: _____ ID Number: _____

SPECIAL INSPECTION WEEKLY REPORT

City/County of _____ Permit No.: _____ Date : _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

☐ Continuous ☐ Periodic; frequency: _____

Total inspection time each day:

Dates							
Hours							
Inspector							

Inspections made, including locations: _____

Tests performed: _____

Items requiring 1) Correction, 2) Correction of previously listed items, and 3) Previously listed uncorrected items: _____

Changes to approved plans authorized by registered design professional in responsible charge: _____

Comments: _____

To the best of my knowledge, work inspected was in accordance with the building department approved plans, specifications and applicable workmanship provisions of the IBC except as noted above.

Signed: _____ Inspection Agency: _____

Print full name: _____ ID Number: _____

cc: Building Department
Engineer/Architect

SPECIAL INSPECTION DISCREPANCY NOTICE

City/County of _____ Permit No.: _____ Date : _____

Project Name/Address: _____

Inspection Type(s)/Coverage: _____

☐ Continuous ☐ Periodic; frequency: _____

Notice delivered to: ☐ Contractor ☐ Engineer/Architect ☐ Building Department

The following discrepancies require correction and inspection approval prior to proceeding with this phase of the work:

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on the right side, suggesting it's resting on a surface. There is no handwriting or other markings on the paper.

Signed: _____ Inspection Agency: _____

Print full name: _____ ID Number: _____

DO NOT REMOVE THIS NOTICE

Post with building permit inspection record card

SPECIAL INSPECTION FINAL REPORT

City/County of _____ Permit No.: _____ Date: _____

Attention: _____

Project Name/Address: _____

In accordance with Section 1704 of the *International Building Code*, special inspection has been provided for the following items:

[illegible]

Based upon inspections performed and our (my) substantiating reports, it is our (my) professional judgment that, to the best of our (my) knowledge, the inspected work was performed in accordance with the approved plans, specifications and applicable workmanship provisions of the *International Building Code*.

Signed: _____

Inspection Agency: _____

Print full name: _____

ID Number: _____

or Agency Responsible Engineer's stamp:

cc: Client/Project Owner
Engineer/Architect

APPENDIX B

Job Task Lists for Special Inspectors:

- Reinforced Concrete
- Prestressed Concrete
- Structural Masonry
- Structural Steel and Bolting
- Structural Steel and Welding
- Spray-applied Fireproofing

JOB TASK LISTS FOR SPECIAL INSPECTORS

These task lists are representative of the tasks tested in the ICC certification exams and is found in the “Exam Information Bulletin” found at

<http://www.iccsafe.org/certification/pdf/NationalCertificateCandidateBulletin.pdf>

The building official may desire to review these tasks in reviewing the proposed special inspection activities for a particular project and evaluating the qualifications of special inspectors.

A. Reinforced Concrete

1. General Requirements

Review approved plans and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction. Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the registered design professional in responsible charge and the building official. Submit progress reports to the registered design professional in responsible charge and the building official, describing tests that were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved plans and applicable provisions of the building code.

2. Concrete Quality

Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and proper consistency and workability for placement. Determine the required type, quantity and frequency of tests to be performed on fresh and hardened concrete. Observe sampling of concrete, field testing of fresh concrete and making of test specimens. Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory. Provide or arrange for communication of field-testing results to the registered design professional in responsible charge and to the building official.

3. Reinforcement

Verify that reinforcing steels are of the type, grade and size specified and are in conformance with acceptable quality standards. Ensure that reinforcing steel is free of oil, dirt and rust and that steel is properly coated and/or sheathed as specified. Verify that reinforcing steels are located within acceptable tolerances and are adequately supported and secured to prevent displacement during concrete placement. Verify that minimum concrete cover is provided. Verify that placement of reinforcing steel (or ducts) complies with required spacing, profile and quantity requirements, as indicated by both the approved plans and installation drawings. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify proper installation of approved mechanical connections per the manufacturer's instructions and/or evaluation reports. Insure that all welds of reinforcing steel and other weldments are as specified and have been inspected and approved by an approved welding inspector.

4. Formwork, Joints and Embeds

Verify that formwork will provide concrete elements of the specified size and shape. Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications and building code requirements. Verify that the type, quantity, size, spacing and location of embedded items are as specified.

5. Concrete Placement, Protection and Curing

Verify acceptable condition of the place of deposit before the concrete is placed. Verify that methods of conveying and depositing concrete avoid contamination and segregation of the mix. Verify that concrete is being properly consolidated during placement. Verify that concrete is protected from temperature extremes, and determine that proper curing is initiated.

B. Prestressed Concrete (All items listed above under Reinforced Concrete are considered prerequisite to the knowledge for special inspection of prestressed concrete.)

1. General Requirements

Comply with special inspection requirements of the enforcing jurisdiction. Review approved plans and specifications for project details that pertain to special inspection requirements. Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the registered design professional in responsible charge and the building official. Submit progress reports to the registered design professional in responsible charge and the building official, describing tests that were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved construction documents and applicable provisions of the building code.

2. Concrete Quality

Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and proper consistency and workability for placement. Determine the required type, quantity and frequency of tests to be performed on fresh and hardened concrete. Observe sampling of concrete, field testing of fresh concrete and making of test specimens. Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory. Provide or arrange for communication of field testing results to the registered design professional in responsible charge and to the building official.

3. Reinforcement

Verify that reinforcing steel and tendons are of the type, grade and size specified and are in conformance with acceptable quality standards. Verify that the reinforcing steel and tendon system are fabricated in conformance with acceptable quality standards. Verify that the condition of tendons at the time of concrete placement are free of oil, dirt and excessive rust, and are properly coated and/or sheathed as specified. Verify that reinforcing steel and tendons are located within specified tolerances, and are adequately supported and secured to prevent displacement during concrete placement. Verify that minimum concrete cover is provided. Verify that placement of reinforcing steel and tendons (or ducts) comply with spacing, profile and quantity requirements, as indicated by the installation drawings and approved plans. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify proper installation of approved mechanical

connections per the manufacturer's instructions and/or evaluation reports. Verify that welds have been inspected and approved as specified. Verify that prestressed rock and soil anchors are fabricated and installed as specified.

4. Prestressing and Grouting

Verify that the required concrete strength has been attained prior to transferring prestressing forces. Verify proper equipment calibration. Verify that proper stressing (or tensioning) sequences are used, proper jacking forces are applied, and acceptable elongations are attained and recorded. Verify that tendons and anchorages are properly sealed or otherwise protected as specified. Verify that ducts including inlets and outlets are of the required size, are mortar-tight and are located correctly. Verify that proper grout materials, strength and grouting pressures are used as specified.

5. Formwork, Joints and Embedments

Verify that formwork will provide concrete elements of the specified size and shape. Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications, and applicable codes and standards. Verify that the type, quantity, size, spacing, condition and location of embedded items are as specified.

6. Concrete Placement, Protection and Curing

Verify acceptable condition of the place of deposit before the concrete is placed. Verify that methods of conveying and depositing concrete avoid contamination, segregation of the mix, and displacement of reinforcement, embedments and forms. Verify that concrete is being properly consolidated during placement. Verify that concrete is protected from ambient temperature extremes during placement and curing. Verify that concrete is being cured as specified by approved plans, specifications and applicable codes.

C. Structural Masonry

1. General Requirements

Review approved plans, specifications and submittals for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction in accordance with the applicable code, approved plans and specifications. Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the registered design professional in responsible charge and the building official of deviations. Submit progress reports to the registered design professional in responsible charge and the building official, describing tests that were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved plans and applicable provisions of the building code.

2. Materials

Verify that brick, block, cement, lime, aggregates, reinforcement, connectors, water, admixtures and other materials are the type specified and approved. Verify that materials are properly stored. Verify that mix proportions, material handling and mixing are in accordance with code requirements. Verify that grout is batched in accordance with approved mix. Determine the required material strengths, type and frequency of tests to be performed. Observe sampling, field testing and fabrication of test

specimens. Verify that masonry strength meet approved specifications. Verify proper sample identification, site storage, protection and transportation to the testing laboratory.

3. Masonry Placement

Verify that the condition of substrate is acceptable for placement, that mortar is properly placed and that the masonry units are placed in accordance with the approved plans. Verify that the type, quantity, size, spacing and location of embedded items are as specified. Verify that the location and preparation of movement joints are in accordance with the approved plans, specifications and building code requirements. Verify that the masonry is protected from temperature extremes and adverse weather conditions.

4. Reinforcement and Connector Placement

Verify that the reinforcing steel and connectors comply with required size, spacing, profile, condition and quantity requirements, as indicated by both the approved plans and installation drawings. Verify that reinforcing steel and connectors are placed in the proper location within acceptable tolerances. Verify minimum coverage and clearance to masonry surfaces. Verify that hooks, bends, ties, stirrups and supplemental reinforcement are fabricated and placed as specified. Verify that required lap lengths, stagger and offsets are provided. Verify installation of approved mechanical connections per manufacturers instructions and/or evaluation reports.

5. Grout Placement

Verify that grout spaces are free of obstructions and that cleanouts are provided as required. Verify that methods of conveying and placing grout avoid contamination and segregation and comply with time limits and grout lift requirements. Verify that grout is being properly consolidated and reconsolidated during placement.

D. Structural Steel and Bolting

1. General Requirements

Review approved plans and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction. Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the registered design professional in responsible charge and the building official of deviations. Submit progress reports to the registered design professional in responsible charge and the building official, describing tests that were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved plans and applicable provisions of the building code.

2. Material Sampling, Testing and Verification

Verify that the steel shapes and bolts are of the type, size, grade and condition specified on the approved plans and specifications. Verify the required type, quantity, location and frequency of tests to be performed, and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the laboratory. Verify that required testing is performed on materials as required by applicable standards and specifications.

3. High-Strength Bolting

Verify correct type, size and location of bolts and bolt holes, nuts and washers for type of connection specified on approved plans and specifications. Verify protected storage of bolts, nuts and washers as required by applicable standards and specifications. Verify that faying surfaces at connections utilizing high-strength bolts are in compliance with applicable standards. Observe or conduct bolt tension verification tests on required high-strength bolt assemblies. Identify and verify joint type and installation of bolt assemblies per approved plans and specifications. Verify use of the approved method and sequence of bolt tightening.

4. Steel Framing Observation

Verify that structural steel frame orientation, details and frame member sizes are in accordance with approved plans and specifications. Verify that column base plates are the designed configuration, have correct size hole and proper clearance for grouting. Verify grout placement and sampling. Verify that base plates are securely seated and fastened in accordance with applicable plans and specifications.

E. Structural Welding

1. General Requirements

Review approved plans and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction. Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the registered design professional in responsible charge and the building official. Submit progress reports to the registered design professional in responsible charge and the building official, describing tests that were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved plans and applicable provisions of the building code.

2. Material Sampling, Testing and Verification

Verify that the steel shapes, base metals, filler metals and gases are of the type, size, grade and condition specified on the approved plans, specifications and Welding Procedures Specifications. Verify the required type, quantity, location and frequency of tests to be performed, and witness preparation of properly identified test material samples on all materials. Provide or arrange for documentation and transportation of samples to the laboratory. Verify that required destructive testing is performed on materials as required by applicable standards and specifications. Verify that required nondestructive examinations are performed as required by applicable standards and specifications.

3. Structural, Reinforcing and Sheet Steel Welding

Verify that the welding equipment and process has the capability to produce the specified welds. Insure that welding equipment is calibrated and appropriate for use with the welding process. Verify and/or witness qualification of welders, welding operators and tackers for conformance with AWS standards and specifications. Verify that welders are qualified to perform the specified work. Verify that the proposed welding procedure for structural steel, reinforcing steel and sheet metal is a standard prequalified procedure, or has been properly qualified and approved. Verify that welding processes, sequences and procedures are followed in accordance with approved Welding

Procedures Specifications. Review approved plans and specifications for weld types and locations. Verify that filler materials are stored and handled in accordance with manufacturer and project specifications. Verify that base metal to be welded is properly prepared and oriented. Verify that weldments have proper joint geometry and have backing and start/runoff tabs where required. Inspect to insure that weld and structural steel repairs are performed in accordance with approved procedures. Verify that fabricated elements are within permissible tolerances. Verify that welds have the specified length and effective throat. Verify that the weld profile meets applicable shape, size and quality requirements.

F. Spray-applied Fireproofing

1. General Requirements

Review approved plan and specifications for special inspection requirements. Comply with special inspection requirements of the enforcing jurisdiction. Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the registered design professional in responsible charge and the building official. Submit progress reports to the registered design professional in responsible charge and the building official, describing tests that were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved plans and applicable provisions of the building code.

2. Materials, Preparation, Application and Testing

Verify that the proposed materials are of the type specified, are properly stored and have been approved by the registered design professional in charge and the building official. Verify that the substrate has been properly prepared and is free of oil, dirt, scale, loose paint or primer and other materials that may prevent adequate adhesion. Identify the members to be fireproofed and the minimum required coverage and thickness. Verify the condition of the finished application. Determine the required type and frequency of tests to be performed. Observe the sampling, field testing and fabrication of test specimens. Verification that materials are of type specified, properly stored and approved; verification that the substrate has been properly prepared and free of conditions which may prevent adhesion; identification of members to be fireproofed, the minimum required coverage and thickness of the fireproofing, and the condition of the finished application; and determination of the required tests and observation of sampling, field testing and fabrication of test specimens.

APPENDIX C

Examples of Special Inspector Qualification Standards

The minimum qualifications listed below are from the IAS Document AC291 - Accreditation Criteria for IBC® Special Inspection Agencies and are given for examples of qualifications. Experience is hard to replace with education and where the responsible professional for an agency provides his signature as evidence of competency for the special inspector, it should be respected. Ultimately, the IBC places the responsibility for approval of special inspectors and special inspection agencies upon the building official.

Experience

1. In order for experience to count toward qualifications, it must be based on verifiable work directly related to the category or type of inspection involved.
2. An engineering degree (BS) plus appropriate in-house training may be substituted for not more than one year of experience. An engineering technology degree (AA) plus appropriate in-house training may be substituted for not more than six months of experience. (Degree experience may not be substituted for more than half of the experience requirements in any category.)
3. Five or more years experience as a qualified special inspector in one or more categories of work may fulfill up to half of the experience requirements in any category, at the discretion of the (agency's) responsible professional engineer.

Certification

Certification, when specified, is intended to mean successful completion of an ICC examination appropriate to the category of work involved.

Special Inspector in Training

1. The intent of this provision is to provide practical opportunities for an inspector to gain the needed experience to qualify as a special inspector.
2. An inspector who does not meet the qualifications for special inspector may be allowed to perform "special inspection" at the discretion of the agency's responsible professional engineer, provided one or more of the following conditions are met:
 - (a) Individual is working under direct and continuous supervision of a special inspector fully qualified for the type of work involved.
 - (b) Individual is working under indirect or periodic supervision of a special inspector, and the scope of work is minor and/or routine and within the capabilities of the individual.
 - (c) Individual is specifically approved by the building official.

Minimum Qualifications for Special Inspectors

CONCRETE CONSTRUCTION (PRESTRESSED AND REINFORCED)

1. PRESTRESSED

Current certification in ICC prestressed concrete inspection.

2. REINFORCED

2.1 Current certification in Reinforced Concrete Special Inspection by ICC (see note below) and one year of experience.

2.2 P.E. and a minimum one year of direct experience in reinforced concrete construction. Applicant must be qualified under Section 6.2 within 12 months of accreditation.

- 2.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience. Applicant must be qualified under Section 6.2 within 12 months of accreditation.
- 2.4 ACI Concrete Construction Inspector and a minimum one year of experience.
NOTE: Passing the ICC exam on reinforced concrete special inspection or having the reinforced concrete associate certification will not be considered without meeting the education/work experience requirements by ACI and ICC.

3. NONDESTRUCTIVE TESTING (NDT)

- 3.1 Current American Society for Nondestructive Testing (ASNT) Level II as determined by Level III Examiner and a minimum one year of direct testing experience.
- 3.2 Personnel qualified in accordance with nationally-recognized NDT personnel qualifications practice or standard, such as ANSI/ASNT-CP-189 or SNT-TC-1A.

4. PIER AND PILE FOUNDATIONS

- 4.1 Current ICC certification in Reinforced Concrete Special Inspections.
- 4.2 P.E. and a minimum one year of experience.
- 4.3 NICET III or IV (geotechnical/construction or construction material testing/soils) and a minimum five years of experience.
- 4.4 NICET CT Certified Engineering Technologist and a minimum five years of experience.

5. POSTINSTALLED STRUCTURAL ANCHORS IN CONCRETE

- 5.1 Current ICC certification as a Residential or Commercial Building Inspector, as applicable, and a minimum two years of experience in the activity being inspected.
- 5.2 P.E. and a minimum one year of experience in the activity being inspected.
- 5.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience in the activity being inspected.

6. SOILS

- 6.1 NICET II, III, IV or CT (geotechnical/construction or construction material testing/soils) and a minimum two years of experience.
- 6.2 Technician with a minimum three years of documented experience directly related to soils testing and inspection under a licensed P.E.
- 6.3 Bachelors degree in Civil or Structural Engineering/Geologist from an accredited institution and a minimum two years of experience.
- 6.4 P.E. in geotechnical engineering or equivalent P.E.

7. SPRAYED FIRE-RESISTANT MATERIALS

- 7.1 Current ICC certification as a Spray-applied Fireproofing Special Inspector.
- 7.2 P.E. and a minimum one year of experience in fireproofing applications.
- 7.3 Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience in fireproofing applications.

8. STEEL (BOLTING AND WELDING)

BOLTING

- 8.1 Current ICC certification in structural steel and bolting and a minimum one year of experience.

WELDING

- 8.2 AWS Certified Welding Inspector (CWI).
- 8.3 Current ICC certification in structural steel and welding and a minimum one year of experience.

9. STRUCTURAL MASONRY CONSTRUCTION

- 9.1** Current ICC certification in masonry and a minimum one year of experience.
- 9.2** P.E. and a minimum one year of relevant experience.
- 9.3** Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience.

10. STRUCTURAL WOOD CONSTRUCTION

Current ICC certification as a commercial or residential building inspector, as applicable, and one of the following:

- 10.1** A minimum two years of direct experience in engineered wood products, or
- 10.2** A minimum five years of direct experience as a journeyman carpenter.

11. SPECIAL CASES

- 11.1** Current ICC certification as a Special Inspector and a minimum two years of experience in the activity being inspected.
- 11.2** P.E. and a minimum one year of experience in the activity being inspected.
Exception: Individuals who have proven expertise in a specialty field, either through education or field experiences of not less than five years, may be considered as meeting criteria to conduct one or more classes of specialty inspections.
- 11.3** Bachelor's degree in Civil or Structural Engineering from an accredited institution and a minimum two years of experience in the activity being inspected.

Reference Abbreviations and Recognized Certifying Agencies

- | | | |
|-----|----------|---|
| 1. | AA | Associate of Arts |
| 2. | ACI | American Concrete Institute |
| 3. | ACIA | American Construction Inspectors Association |
| 4. | ASTM | American Society for Testing and Materials |
| 5. | ASNT | American Society for Nondestructive Testing |
| 6. | AWS/ACWI | American Welding Society/Associate Certified Welding Inspector |
| 7. | AWS/CWI | American Welding Society/Certified Welding Inspector |
| 8. | BS | Bachelor of Science |
| 9. | IBC | International Building Code |
| 10. | NICET | National Institute for Certification of Engineering Technologists |
| 11. | NRCA | National Roofing Contractors Association |
| 12. | IAS | International Accreditation Service |
| 13. | PDS | Professional Development Services (Division of ICC) |